

REMARKS

Applicant has carefully reviewed the Examiner's objections, rejections, and comments as found in the Office Action dated April 10, 2007 and provides the following remarks regarding the Office Action. Claims 1, 2, 4 - 8, and 18 - 19 are pending in this application.

New Matter - 35 USC §132(a)

The Examiner has rejected the amendment filed January 22, 2007 under 35 USC 132(a) because it introduces new matter into the disclosure. This rejection is respectfully traversed. Nevertheless, Applicant has canceled the amended disclosure presented in the January 22, 2007 response. Therefore, it is believed that this rejection is overcome.

Claim Rejection - 35 USC §112, Second Paragraph

The Examiner has Claims 6 - 8 under 35 USC §112, Second Paragraph as being indefinite for failing to particularly point out and claim the subject matter which applicant regards as the invention. This rejection is respectfully traversed. Nevertheless, Applicant has amended Claims 6 - 7 to delete the reference, "of silicone modified epoxy resin" for clarity purposes. Additionally, Applicant notes as previously argues, that the total weight of the total polyol prepolymer chain extender serves as the basis for the total weight of the components. Claim 8 has been canceled. Therefore, it is believed that this rejection is overcome.

Claim Rejection - 35 USC §103(a)

The Examiner rejected Claims 1, 2, 4, 5, and 18 - 19 under 35 U.S.C. §103(a) as being unpatentable over WO 02/10255, herein Herzig et al (US Pat. No. 6,835,419). This rejection is respectfully traversed. Applicant respectfully submits that the WO 02/10255, as interpreted by Herzig et al. neither forms the basis of nor establishes a *prima facie* case of obviousness. For a *prima facie* case of obviousness to be established, the Examiner must show that one or more references that were available to the inventor meet three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP 2142)

As the Examiner has noted, the reaction product between epoxy siloxane and a diamine that is subsequently protonated, thus it is an intermediate product. The Herzig et al. reference does teach stopping the reaction before it becomes a gel and then protonating the intermediate to create a stable alpha omega material, not a branched system as described and claimed in the present application. If the Herzig et al. reference were to use a branched system, a stable compound would not be produced, because a linear amine, like a diamine, mixed with a branched epoxy functional silicone, such as HP 1000[®], produces a dimerized or trimerized reaction, thus the number of centers becomes almost exponentially large to produce an undesirable gel. To avoid producing such a gel, the Herzig et al. reference only works with alpha omega diamines and alpha omega epoxy functional silicones; such materials will not gel and can become very high in molecular weight with a desired viscosity of a liquid. Therefore, to control the molecular weight of the Herzig et al. reference material, a monofunctional amine, such as n-octylamine, is used, which by its use would not provide a cross link of the present application.

Furthermore, the Herzig et al. reference uses a solvent based reaction to avoid creating a gel (Col. 8, Ln. 65 – Col. 9, Ln. 9). Also, the Herzig et al. reference dissolves the polymer in materials such as diethylene glycol and dibutyl ether, followed by protonating the intermediate with acetic acid. The present application does not involve any of these steps to create a liquid polyurea having a desired viscosity.

Further, contrary to the Examiner's beliefs, if a branched silicone molecule was cold blended with an amine, such as Jeffamine 200, the two materials would phase separate, because a silicone does not want to incorporate into a polymer. This is because two or more polymers are generally incompatible when mixed together. For example, when mixing most silicones, polyurethanes, and polyureas together a phase separated mixture is produced. Additionally, if these two components were then mixed with a B-component isocyanate, they all would phase separate out when a user went to use them. It is well known that by mixing epoxy groups with amines produces amino alcohols, thus the Herzig et al. reference does not obviate this problem. By simply combining what is taught by the Herzig et al. reference the desired material as disclosed and claimed in the present application would not be achieved.

Conversely, as found in the original specification, examples, and previously amended Claim 1 and original Claims 18, the present application includes a molar excess of at least one amine relative

to the branched epoxy functional silicone. The present application solves the limitations found in the Herzig et al. reference by controlling the viscosity by using polymeric amines, such as diamines, and aliphatic amines, such as diamines, in combination with a trifunctional silicone, which would otherwise be problematic but for the amine being in a molar excess to the epoxy functional silicone. By using a molar excess of amines in combinations with an epoxy functional silicone, the present application is able to produce desirable prepolymers, which then can react with an isocyanate to produce a modified polyurea not achievable by that disclosed in the Herzig et al. reference.

Therefore, as argued above, the Herzig et al. reference teaches away from the present invention that uses at least one amine in a molar excess relative to the at least one branched epoxy functional silicone. Thus, Applicant respectfully submits that the Herzig et al. reference does not form the basis of a *prima facie* case of obviousness of independent Claims 1 and 18. Therefore, it is believed that Claims 1 and 18 are allowable under 35 U.S.C. §103(a). Claims 4, 5, and 19, depend from and include all the limitations of previously amended Claims 1 and 18, respectively, thus they are also believed to be allowable under 35 U.S.C. §103(a).

Regarding the Raleigh et al. reference, it describes many known silicone polymers and reacts them with possibly polycarbonates. In addition, the Raleigh et al. reference claims thermoplastics, but the present invention does not disclose nor claim thermoplastic type materials.

For the reasons stated above, Raleigh et al. reference in light of previously amended independent Claim 1, Applicant respectfully submits that the Raleigh et al. reference does not form the basis of a *prima facie* case of obviousness of independent Claims 1 and 18. Therefore, it is believed that Claims 1 and 18 are allowable under 35 U.S.C. §103(a). Claims 4, 5, and 19 depend from and include all the limitations of previously amended Claims 1 and 18, respectively, thus they are also believed to be allowable under 35 U.S.C. §103(a).

In view of the above amendments and remarks, Applicant believes the pending application is in condition for allowance. A fee of \$510.00 for a three-month extension and a filing fee of \$395.00 for the RCE are believed to be due. However, if any other fee is due, please charge the deficiency to our Deposit Account No. 50-2816, under Order No. 009608.0113PTUS from which the undersigned is authorized to draw.

Application No. 10/648,934
Amendment dated January 18, 2007
Reply to Office Action dated April 10, 2007

Docket No.: 009608.0113PTUS

Respectfully submitted,

PATTON BOGGS LLP

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By: 

V. Craig Belair

Registration No.: 49,056

(214) 758-6631

(214) 758-1550 (Fax)

Attorney for Applicant

Customer No. 24,283